RESEARCH ON BIOLOGICAL VALUE OF FROZEN SEMI-FINISHED GROUND MEAT PRODUCTS USING THE “KRIOMEAT” FORMULAE WHEN STORED

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Semi-finished ground meat products affected by low temperatures due to freezing are subject to a number of negative changes caused by physical and chemical, biochemical, microbiological intensified processes due to their subsequent freezer storage. Some main changes detected while freezing meat for processing are the profound changes in myofibrillar proteins which directly affect the nutritional and biological value of semi-finished products after defrosting. As a result, the frozen meat producers face the target of finding new nutrients to be used on purpose as included in semi-finished ground meat products ensuring the leveled effect of low temperatures while freezing and subsequent storage. This issue is highlighted in the works of many national and foreign scientists, but the solution to the problem of regulating the crystallization process in ground meat systems remains relevant and requires further research. Therefore, taking into account the aforementioned, the following direction has been chosen for further works. The article describes the research on biological value of frozen semi-finished ground meat using the “KrioMeat” formulae when stored for 60 days. Taking into account that the included essential and substitutable amino acids are an important indicator of biological value in meat products as a result the research has started with determining the amino acid protein content in the semi-finished products. The obtained results show slight changes in the amino acid content of semi-finished products with “KrioMeat” formulae when stored for 60 days, and the ratio of essential and substitutable amino acids prove a high biological value of the products. The defined data are justified by the results of the amino acid score. The accumulation dynamics of soluble protein in the semi-finished products has been determined while conducting the research as well as a diagram of protein enzymatic hydrolysis has been designed with proteolytic enzymes. Basing on the received results, it has been proved that the protein enzymatic hydrolysis is stable, and as a result of preserving their digestion ability as for the protein in semi-finished products with the “KrioMeat” formulae when stored frozen for 60 days. Thus, the targeted use of the “KrioMeat” formulae included in the frozen semi-finished ground meat products shall contribute to the preserved biological value of products throughout their shelf life.

**Keywords:** biological value, proteins, amino acids, frozen semi-finished ground meat.